STRATEGY RESEARCH PROJECT

RED HERRINGS AND DEFENSE BUDGETS: TRUE CAUSES AND SOLUTIONS TO THE STRATEGY- RESOURCE MISMATCH

BY

LIEUTENANT COLONEL GREGORY LEE HAUCK
United States Marine Corps

USAWC CLASS OF 2002

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

USAWC STRATEGY RESEARCH PROJECT

Red Herrings and Defense Budgets:
True Causes and Solutions to the Strategy-Resource Mismatch

by

Lieutenant Colonel Gregory Lee Hauck
United States Marine Corps

Colonel Michael Colpo
Project Advisor

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Lieutenant Colonel Gregory Lee Hauck

TITLE: Red Herrings and Defense Budgets: True Causes and Solutions to the Strategy-Resource Mismatch

FORMAT: Strategy Research Project

DATE: 09 April 2002 PAGES: 30 CLASSIFICATION: Unclassified

The current Defense Program fails to adequately address current readiness shortfalls and long-term modernization needs. If allowed to continue unabated, the ability of U.S. forces to support the National Security Strategy may be significantly jeopardized within the next decade. The factors normally cited as catalysts for this situation are the Planning, Programming, and Budgeting System (PPBS), and a chronically under funded Defense budget throughout the last decade. These commonly accepted problems with the defense budget are not the true drivers for shortfalls in the defense program. Accordingly, the commonly accepted means for fixing the problems are inevitably going to fall short of their goals. Without a true understanding of the principal factors affecting defense spending, viable, long term solutions cannot be reached. A comprehensive and systemic understanding of the root causes for our current strategy-resource mismatch, as well as an appreciation of how the Defense budget relates to the Federal budget, are necessary before effective solutions can be developed.

TABLE OF CONTENTS

RED HERRINGS AND DEFENSE BUDGETS: TRUE CAUSES AND SOLUTIONS TO THE STRATEGY-RESOURCE MISMATCH

The government solution to a problem is usually as bad as the problem.

—Milton Friedman

The current Defense Program fails to adequately address current readiness shortfalls and long-term modernization needs. If allowed to continue unabated, the ability of U.S. forces to support the National Security Strategy may be significantly jeopardized within the decade. The purpose of this paper is to review the true causes behind the so-called "strategy-resource mismatch" and then develop solutions, both near- and long-term, that address the challenges faced by Defense planners today.

For the last few years successive Chairmen of the Joint Chiefs of Staff and the Service Chiefs have presented testimony to congressional subcommittees highlighting critical funding shortfalls across the Defense program.[1] Readiness, infrastructure, quality of life, modernization, and procurement are but a few of the critical functional areas cited as lacking adequate funding. Senior service representatives point to declining funding as a primary cause of recent shortfalls in material and personnel capabilities. Department of Defense officials, to include the Secretary of Defense, have also charged the Planning, Programming, and Budgeting System with being a principle factor in a process that fails to meet the needs of the organization.[2]

Given these "roadblocks" to success, it would appear fairly easy to develop viable solutions. One such recommendation in recent years has been an effort to fix Defense spending to indices such as the Gross Domestic Product (GDP).[3] Additionally, The Department of Defense has recently tried to "restructure" the programming and budgeting cycle to make it more efficient and responsive.[4] Yet, what these apparent common-sense solutions fail to account for is that the Defense budget is the product of numerous complex, interrelated, disparate, dynamic, and often times invisible factors that not only thwart simple solutions, but may also cause seemingly obvious resolutions to be catalysts for future problems.

After much research and review, it is my opinion that efforts to implement a new budgetary process or allocate more money for defense will not, by themselves or in concert, eliminate budgetary shortfalls and improve the Defense posture. The commonly accepted problems with the defense budget are not the true drivers for shortfalls in the defense program. Accordingly, the commonly accepted means for fixing the problems are inevitably going to fall short of their goals. Without a true understanding of the principal factors affecting defense spending, viable,

long terms solutions cannot be reached. A comprehensive and systemic understanding of some of the root causes for our current strategy-resource mismatch, as well as an appreciation of how the Defense budget relates to the Federal budget, are necessary before an effective solution can be developed. Without an understanding of the causes and context of our current Defense budget dilemma, our strategic leaders are doing little more than chasing red herrings as they strive to close the gap between strategy and resources. In the end, the question is not "how do we fix the Defense budget?" Rather, it is "how can we develop a realistic, effective, and long-term affordable program for the Department of Defense?"

CURRENT READINESS AND MODERNIZATION SHORTFALLS

The primary purpose of U.S. military forces is "to deter, and if necessary, to fight and win conflicts in which our vital interests are threatened."[5] Underpinning this purpose is a requirement to achieve and sustain a high level of combat readiness across the force. Increasingly, the ability of our services to reach readiness goals has been problematic. The Government Accounting Office (GAO) released a report in May 2001 indicating that the Army has on hand only 35 percent of its stated requirements of prepositioned spare parts and has about a one billion dollar shortfall in required spare parts for war reserves.[6] The Army is not alone in suffering from a shortage of spare parts. A July 2001 GAO report indicated spare parts shortages have "adversely impacted both the Navy's readiness to perform assigned missions and the economy and efficiency of its maintenance activities and have contributed to problems retaining military personnel."[7] Spare parts shortages are only one indicator of readiness problems and can obviously have a "domino effect" on other elements of the force. Indicators such as personnel readiness and reasonable average equipment ages are equally as important and have also been frequently cited as areas of concern.[8]

President George W. Bush's administration assumed control in 2001 and immediately set out to address the problem of readiness in the Department of Defense. As promised early in his campaign, President Bush focused on the problems of Defense and followed up on his pledge that "help is on the way" with a Fiscal Year (FY) 2003 Defense program that exceeds the FY 2002 budget request by over 15 percent.[9] Concurrently, the Department of Defense has embarked on an effort to streamline processes within the programming and budgeting cycle to induce efficiencies and improve responsiveness.[10] But before the ink was dry on the FY 2003 presidential budget request, concerns were being raised that these increases may not be enough to resuscitate a Defense program that has failed to keep pace with the fiscal requirements of the force.

SHAPING THE DEFENSE BUDGET

How is it possible that a budget the size of the FY 2003 Presidential request cannot correct the deficiencies in Defense resourcing? To answer that question, and understand where we are now, we need to review historically where we have been and understand some of the factors that have influenced the defense budget. A brief review of recent attempts to shape the defense budget will begin to provide an instructive glimpse at the difficulty of crafting a program to meet the needs of the force. Additionally, an historic perspective of select defense budgetary trends and a perspective of the defense budget from a federal, macro-budgetary view will contribute to a broader, more strategic understanding of the factors effecting our current and projected defense funding challenges.

THE QUADRENNIAL DEFENSE REVIEW PROCESS

A window into the process of shaping the defense budget is the congressionally mandated Quadrennial Defense Review (QDR). In addition to providing a comprehensive assessment of the force relative to future requirements, a high priority of the review is to develop program options to guide defense investment and modernization.[11] It is out of this study that long term programming policy must be derived to shape the force. In essence, the report of the Quadrennial Review becomes the "big blue arrow" that guides future programming and budgeting decisions. It is notable that the Terms of Reference that guided the recently completed 2001 QDR stated that "key outputs of the Senior-Level review group will be QDR findings, Fiscal Guidance and Defense Planning Guidance."[12] Clearly, the QDR represents a major input into the process that generates the Defense budget. While it remains too early to critically evaluate the 2001 QDR, there is ample information available to analyze the effect of the 1997 QDR on the Defense budgets over the last few years.

The 1997 QDR

The 1997 QDR developed a strategy of shape, respond, and prepare to "deal with the world today, identify required capabilities, and define the programs and policies needed to support them."[13] The QDR then anchored its implementation in what it believed to be the fundamentals of military power today and the future: quality people, ready forces, and superior organization, doctrine, and technology.[14] In execution, it chose a path that sought to balance capabilities to address near-term challenges with focused investments to counter longer-term threats. Essentially, the QDR embarked on a course to maintain current global commitments and

capabilities while simultaneously investing heavily in the future means to address uncertain or anticipated long-term threats. The bill payer for this strategy was a smaller force structure with a truncated or reduced procurement schedule.

An insightful report card of the 1997 QDR can be gleaned by examining the report of the 2001 Review. In describing the state of the military, the 2001 QDR reported that while forward deployed and "first to fight" forces are trained and ready, other operational and supporting units are increasingly less ready. The report attributes the decline in these forces to "fiscal constraints" imposed on the Department during the last decade.[15] Interestingly, one of the underlying assumptions used by the 1997 QDR was that national defense spending would remain relatively constant in the future.[16] In fact, the defense budget has experienced a 4% growth in constant (inflation adjusted) dollars from fiscal year (FY) 1997 through 2001.[17] One must be reminded that this growth is spread over a smaller force structure than existed in 1997.[18] Also, the growth from 1997 to 2001 does not reflect execution-year defense supplementals or contingency fund reimbursements, which, if included, would further add to the real growth of the DoD budgetary authority.

A brief examination of how the 1997 QDR's proposals were executed, as well as the ultimate end state achieved four years later, would assist in understanding how a gap can develop between a vision, as articulated in the 1997 QDR, and reality, as seen four years later by the 2001 QDR. To do this we will examine the three areas described by the 1997 QDR as the "fundamentals of military power."

Quality people – Quality people, superbly led by commanders, were seen as our most critical asset. Accordingly, recruiting and retaining "first string" members was seen as a way to ensure the quality of the force's personnel. Coupled with recruiting and retention was an emphasis on quality of life initiatives geared to improve living and working conditions for service members and their families. Interestingly, from FY 1997 to FY 2001, military pay per service member dropped in FY 01 constant (inflation adjusted) dollars by nearly 2%.[19] Family housing funding experienced a decline of over 18% and military construction (MILCON) dropped by 51%. Clearly, the resources allocated for "quality people" and quality of life fell short of the ultimate end state envisioned by the 1997 QDR. Accordingly, recruiting lagged behind historical levels and Department-wide retention concerns were elevated to the Congressional level for action.[20]

Ready forces – Ready forces allow the Department to shape and respond to today's and tomorrow's emerging global challenges. Yet, as acknowledged in the report of the 2001 QDR, there is a pronounced decline in the overall readiness of our forces to respond in a rapid, sustained, and overwhelming manner. While much of the detailed readiness information

remains beyond the classification of this paper, there has been sufficient information available in unclassified versions of readiness reports (such as the unclassified portion of the Quarterly Readiness Report to Congress) and numerous Government Accounting Office (GAO) reports that highlight the declining state of readiness of our forces.[21]

The dominant drivers of force readiness are effective personnel management, spare parts availability, and reasonable average equipment ages. Personnel issues have already been mentioned and are likely to continue to adversely drive readiness, particularly as recent shortfalls in the recruitment of entry-level service members, and the concurrent poor retention rates of first term members, translate into future shortages in mid- and senior- grade leaders in the enlisted and officer ranks. Spare parts and equipment age challenges are directly tied to insufficient funding throughout the decade of the 1990's and should be expected to continue through at least the early years of the 21st Century before reaching critical levels in the later years of the current Future Years Defense Plan (FYDP).

Though operations and maintenance account funding, the source of most spare parts, has grown in real dollars through the FY 1997 to 2001 period, it has only done so by a modest 4%. This low growth rate masks the rising maintenance costs of a smaller force structure that is being used more extensively, and increasingly aging systems which require greater maintenance funds in order to achieve targeted availability goals. Procurement, the answer to the aging crisis, has grown by 26%, which is in consonance with the stated goals of the 1997 QDR to invest in the modernization of the force. However, this is in a large measure attributable to the rising costs per item caused by reduced quantities or poor initial cost estimates for contracts.[22] In other words, we are paying more and getting less. In execution, higher procurement funding over the last few years has not been able to reduce the emerging equipment age crisis.[23] The end result is aging equipment that our service members are increasingly less able to maintain at targeted availability levels despite the marginal increases of funding in maintenance accounts. This rising cost of low readiness directly affects the Department's ability to shape the current global environment and to be ready to respond to unanticipated contingencies quickly and with overwhelming superiority.

Superior organization, doctrine, and technology – The cornerstone for this end state is the ability of the Department to modernize the force with equipment at the cutting edge of technology in order to maintain our services' ability to fight and win the nation's wars. As has previously been described, the procurement funding for new equipment has grown in the FY 97-01 period, though this has not been translated into reduced equipment ages for the Department. In fact, a

recent GAO report reveals that existing and planned investment in tactical aviation is not likely to decrease the average age of tactical aircraft over the next 25 years.[24]

In addition to procurement, another way to reach the goal of a modern, technologically advanced force is through research and development of new and as yet unknown future technologies. This portion of the Defense budget, Research, Development, Testing and Evaluation (RDT&E) has actually fallen by 2% since FY 97. With less funding for new and emergent technologies, our procurement will more likely be limited to existing technologies rather than taking advantage of future opportunities as envisioned in the 1997 QDR.

In sum, the 1997 QDR failed to achieve the desired results in the three areas identified by that report as fundamental components of military power today and into the future. This strategy failure may or may not have been the result of a flawed plan, but it was certainly hampered by a defense program that did not adequately support the priorities established by the 1997 Review. Without a dramatic change in direction by the 2001 QDR we can expect further erosion of the Department's ability to successfully execute the stated goals of the National Military Strategy today as well as a significantly impaired potential to achieve the desired modernization levels required for a true department-wide transformation.

The 2001 QDR

The 2001 Quadrennial Defense Review did little to reorder the priorities established in the report's 1997 predecessor. Contained within the 70 pages of the latest QDR is a reemphasis on the importance of current force capabilities while continuing to focus on a Department-wide transformation that will better prepare our forces for future threat capabilities. Absent from this strategy are clearly identifiable bill payers, such as force reductions or modifications to procurement schedules and quantities, which could support a modernization effort within the previously existing obligating authority (TOA) of the Department. In this regard QDR 2001 is a step backwards from the 1997 Review. The large growth in the Presidential budget submission from FY 2002 to FY 2003 does much to bolster the TOA, but it remains to be seen whether real, long term growth in modernization, readiness, and quality of life accounts will be sustainable. For example, much of the current budgetary growth will most likely be used to meet such immediate concerns as Defense health care, pay increases, and the war on terrorism and therefore will not be available for modernization and transformation.

The lesson to be learned from the 1997 QDR is that difficult choices, once made, must be backed up with fiscal action. The 2001 QDR represented an opportunity to "re-center" our modernization strategy while at the same time improve the viability of our near and midterm

capabilities. In fact, the current Review does neither. The failure of the 2001 QDR to make those choices clear, will, in the end, make it more difficult for the Department's leadership to divine a path to be followed to achieve a more modern, capable, and effective force. The new strategic construct of Assure, Dissuade, Deter, and Defeat pays homage to the importance of maintaining our technical "edge" over potential adversaries but fails to envision a roadmap to guide programmatic decisions. It is in this "strategic vacuum" that a path, paved with hard choices, must be built.

METRICS AND SPENDING CYCLES

In an effort to shape the Defense budget we have seen that fiscal policy, as executed in the FY 1997-2001 defense budgets, was not in consonance with the vision articulated in the 1997 QDR. We have also seen that the 2001 QDR failed to provide the requisite fiscal guidance needed to drive responsible choices in the defense program. But even more problematic than determining what the end state should be, or what fiscal policy will get us there, is the fundamental question of how much do we need, or, more properly phrased, how much is enough?

An essential condition of achieving our national security goals is to match objectives with the resources needed to achieve them. At its core, this is the primary purpose of the Planning, Programming, and Budgeting System. In most organizations that require resource allocation decisions alternative plans are developed and compared. The base line for costs and benefits for commercial organizations is generally measured in dollars. This is an easily recognizable, uniformly agreed upon metric. For National Defense, however, this baseline is much more difficult to frame. We can gauge expenditures, to a degree, but how does one measure the benefits of alternatives for national security, particularly the aspect of deterrence? What is the relative value of a particular option for national defense and what is the opportunity cost of not executing a particular plan? In the absence of direct measures for national security, we turn to proxy measures as indicators. Thus, we have developed various metrics, such as the readiness reporting system, procurement quantities, equipment average ages, plant replacement rates, and maintenance backlogs to tell us whether or not we are "getting it right." As Albert Einstein is reported to have said, "Not everything that can be counted counts, and not everything that counts can be counted."

Additionally, with the need to use proximate rather than direct measures to gauge effectiveness, there exists the very real possibility of selecting the wrong criteria. It is a fair assumption to

believe that if the wrong measures are used in the decision process, incorrect decisions can be made which will waste more resources and prevent goals from being reached.[25]
Because we can't accurately answer the question of how much is enough, and because our measures of effectiveness vary with the incisiveness of the questions asked and the fidelity of our data, we can expect to remain uncertain as to the "right" quantity and mix of defense dollars needed to maintain an "adequate" and "ready" force.

Does this inability to accurately measure requirements and alternatives mean that we should simply surrender and declare that the problem is too hard to solve? Actually, recognizing the difficulty in determining and using effective metrics for Defense is an aid to understanding certain trends in the defense budget over time. In particular, the trend of "cyclic spending" has had a tremendous, though little studied, effect on force readiness.

What is cyclic spending? In reviewing Defense budgets from FY 1945 to FY 2002 three pronounced "spikes" occur in procurement. These high "water marks" for procurement reflect peacetime policy decisions that were based upon a perceived need for more, and newer equipment and capabilities. The effect of these decisions was to push new equipment on the force. Concurrent with the procurement spikes were increases in the Operations and Maintenance (O&M) accounts to fix and maintain the equipment on hand. It would seem that these are good things. However, in the near term beyond each procurement and O&M spike is a trough where policy decisions redirected funds to other programs. To understand the impact of this trough one must realize that procurement dollars, once spent, result in end items that may be in the force for 10, 20 or even 30 years. Thus, cyclic spikes in procurement may not necessarily be disadvantageous. However, O&M dollars generally buy maintenance only for the year they are authorized and appropriated. In practical terms, this means that new equipment initially enters the force with sufficient funding for maintenance and shortly thereafter experiences a precipitous decline in O&M funding. The combination of new, and sometimes more end items, and reduced maintenance dollars, produces a squeeze on the force that eventually results in declining equipment readiness. Ironically, this most often occurs as equipment begins to approach eight to twelve years of service—a time when maintenance funding begins to become more critical to equipment availability. The spikes in procurement are for the years 1952, 1967, and 1985. The troughs for O&M funding are 1961, 1975, and 1997. Policy decisions, driven by a perception of how much was "enough," contributed to the spikes in procurement and also resulted in the subsequent troughs in O&M.

Understanding the nature of the procurement/O&M cycle becomes much easier once one understands that the metrics of determining "how much is enough" are not uniform,

mutually agreed upon, or enduring over time. In fact, it is the fungible nature of national defense measures that directly contributes to the ebb and flow of defense funding over time.

THE SHRINKING DISCRETIONARY BUDGET

We have seen that in theory, recent Defense spending priorities within the Department are largely the product of internal analyses such as the Quadrennial Defense Reviews. We have also observed how our inability to answer the question "how much is enough" tends to fuel a fairly predicable pattern in procurement and maintenance funding. Both of these factors are contributors to the so-called strategy-resource mismatch in the defense budget. Yet, there is another factor external to the defense budget that has a large, and rapidly growing influence on the nation's willingness and ability to budget for defense—the shrinking resources available within the Federal budget for discretionary items.

Within the Federal budget there are essentially two fiscal categories. Mandatory or non-discretionary items are those that are tied to entitlements, such as federal retirement, health care, social security, and other forms of mandatory spending to include payments on the federal debt. An important point to remember is that non-discretionary spending is "off budget." That is, it is not annually debated through subcommittees within Congress. Entitlement spending is considered to be a "binding obligation...of the Federal Government."[26] This implies an enduring quality that assures consistent, predictable funding over time—characteristics that are not common across the spectrum of the federal budget.

The remainder of the federal budget is comprised of discretionary items, such as defense, domestic and foreign programs, and education. Discretionary items compete, in a sense, for funding though it is not direct and is controlled by legislation. However, if entitlement spending is increased, and all other variables are held constant, the net effect will most likely be less discretionary spending for defense, as well as all other discretionary items. In fact, that is exactly the scenario that has been executed for the last three decades.

In 1970 roughly 40 percent of the federal budget was devoted to non-discretionary items with 60 percent allocated to discretionary spending. By 1998, those numbers had more than reversed with non-discretionary budgets comprising 70 percent of federal outlays, leaving discretionary funding with just 30 percent of the budget.[27]

The effect of the shrinking discretionary piece of the federal budget has been significant over the last thirty years. However, the importance of this factor in influencing defense budgets will grow exponentially in the coming decades as more and more Americans, particularly the baby-boomer generation, become eligible for entitlement programs. In May 2000 the GAO

published Federal Mandatory Spending On The Elderly. In this report the GAO estimated that federal mandatory spending on the elderly as a share of gross domestic product (GDP) will grow from 6 percent in 2000 to 6.5 percent in 2010; in the following decade, as the baby boom generation begins to retire in large numbers, this spending will accelerate, reaching 8.4 percent of GDP in 2020.[28] This represents a growth of about 30 percent in federal mandatory spending on the elderly as a share of GDP between 2010 and 2020. Future claims of the elderly on the economy are likely to be larger than indicated by GAO's estimates due to other factors not considered, such as reduced tax revenues from a larger portion of citizens out of the workforce, and the increased costs of prescription medications, long-term care costs, and hours of work forgone by those caring for elderly parents.[29]

The implications for defense spending are obvious. The discretionary piece of the federal budget will, in the coming years, shrink dramatically in the face of rapidly expanding mandatory entitlement spending. Increased tax revenues or a booming economy may mitigate this outcome, but relying on hope or a greater tax burden is a flawed strategy from the start. The previous guns or butter debates will pale in comparison to the direct and difficult choices that will need to be made by the federal government to balance competing requirements in an increasingly constrained fiscal environment. Regrettably, Department of Defense modernization and transformation plans are expected to come to maturation just as larger slices of the federal budget shift to mandatory spending programs. If adjustments are not made soon for this reality, our country's future leadership will be forced to face the choice of breaking a commitment to providing for an adequate national defense or a promise to a generation of Americans who will be entering their "golden years."

FRAMING THE PROBLEM

Clearly, defense budget challenges are more complicated and difficult to solve than simply funding more money for defense and changing the institutional budgetary process. In the wake of the terrorist attacks on 11 September 2001, and the subsequent war on terrorism, a larger defense budget is, to a degree, a *fait accompli* for the near-term. The FY 2003 Defense budget reflects many of our most recent, and pressing, defense needs. Increased personnel authorizations and associated funding, more money for spare parts and other urgent readiness issues, and an increased rate of procurement for off-the-shelf technologies that can be used in the campaign against terrorism are evident as the Presidential Budget request is packaged and forwarded to the Congress for action.

But how do we address the out-year program? Given the rise in near-term costs, and the urgency with which these needs will be met, how will the Department be able to sustain a sufficiently robust modernization effort over the long-term while simultaneously maintaining a ready, capable, and increasingly engaged force? The apparent solution lies in increasing the Department of Defense's share of the budgetary "pie." Increasing long-term funding of the Department has the apparent advantage of meeting both current operational goals and future modernization needs. A 1999 study by the Center for Strategic and International Studies (CSIS) estimated that if left unchanged, the Department's annual budgets would face shortfalls of at least $100 billion per year through 2015.[30] Clearly, it is not a leap of logic to assume that this bill will be even higher given today's operational necessities both at home and abroad, as well as the funding that will be required to recover from the force and infrastructure erosion caused by budget policy decisions made during the previous decade.

Additionally, an obvious near-term competitor for DoD dollars will be the new requirement for homeland security. As the mission for homeland security becomes more defined, increased budgetary authority is sure to follow. Regardless of whether or not the recently created Office of Homeland Security is the direct recipient of these funds, supporting organizations such as the Federal Bureau of Investigation (FBI), Department of Health and Human Services, Federal Aviation Administration (FAA), Immigration and Naturalization Service (INS), Border Patrol, and the Federal Emergency Management Agency (FEMA), to name only a few, will certainly demand, and rightfully receive an increased share of the Federal budget. Larger defense budgets, a greater demand for new or expanded discretionary budget programs such as Homeland Defense and federal law enforcement, and the rapidly approaching requirements in non-discretionary entitlement spending will all converge in 2010 and beyond. Considering that Congress will be debating the FY 2003 budget shortly, 2010 is just around the corner. Unless we prepare now, we will face the real challenges of providing for our national security while simultaneously beginning to support the needs of the "baby boom" generation as they begin to reach retirement age in large numbers.[31] Even in a prosperous economy, we will be forced to decide between buying less program (either in defense or elderly entitlements) or more taxes to support these increasingly voracious budgetary demands. A declining economy will force even more difficult decisions on our country's leadership at a time when options will be increasingly limited. The net effect of larger defense budgets today is not improved readiness and modernization, but rather a deferral of difficult choices to the next generation of strategic leaders.

The question originally posed in this paper was not how do we fix the Defense budget, but rather how can we develop a realistic, effective, and long-term affordable program for the Department of Defense. The former question deals with the micro issue, the Department's budget, in isolation of other factors in the federal government. Answers to this question can, at best, produce short term gains for defense at the expense, and ultimate long term detriment, of both defense and non-defense programs. Regrettably, this is where administration and service officials have focused their attention.

An analysis of the defense program in this paper shows that there are three main areas of concern that influence present and future defense budgets. First, defense reviews with precepts to shape the future force often fail to provide a strategic direction or roadmap to achieve the stated vision. Such is the case with the 2001 QDR. And, when that vision is articulated, and the choices are defined as they were in the 1997 QDR, fiscal policy fails to provide the budgetary support necessary to achieve goals.

Second, our inability to accurately define national defense requirements and goals fuels a cyclic funding pattern that results in spikes and troughs in funding. By not being able to answer the question of "how much is enough," defense spending rides a roller coaster of good times followed by bad. How good is good and how bad is bad become relative measures and fail to adequately address the true needs of the force and the nation.

Finally, pressures within the federal budget will drive difficult choices in the not too distance future as the "guns and butter" debate is replaced with a tug of war between "guns and social security." Those within the Department cannot ignore the realities of a declining fiscal base within the discretionary piece of the federal budget. Competition for scarce resources will have a direct effect on readiness and modernization programs, which will ultimately affect the Department's ability to effectively support our nation's vital interests both at home and abroad.

DEVELOPING LONG-TERM SOLUTIONS

By addressing the question of a realistic, effective, and long-term affordable program for the Department of Defense we are immediately thrust into a macro environment where external influences on the defense budget must be considered equally with internal factors. As has been discussed, more money for defense is not the solution in a macro sense. If we focus on the three areas of concern previously mentioned, we can begin to see a more viable set of solutions begin to form.

MAKE THE DIFFICULT CHOICES AND STICK WITH THEM

Perhaps, given the realities of politics and the often times cavalier attitude with which Americans approach defense spending, this may be a difficult course of action to pursue. As has already been noted in this paper, efforts to shape defense fiscal policies in recent years have fallen short of their goals. The decade of the 1990's can be characterized by an inability to first identify critical decision points, second make difficult choices at these decision points, and third support those decisions, once made, with policy that ensures an opportunity for successfully reaching established goals. It can be argued that the vision articulated in the 1997 QDR may not have been the right solution, but it did, at a minimum, provide a basis for developing long term programming decisions. The inability of subsequent budget policy decisions to support that vision is a testament to the capricious and, perhaps, contemptuous attitude of Service, Department, and Congressional leaders who seem to resist falling in behind a single, unifying concept.

It has also been shown in this paper that the report of the 2001 QDR has even less value for establishing defense spending priorities than the 1997 QDR. It remains to be seen what mechanism will be used to establish Defense spending priorities over the next four years. Absent an apparent strategy for the Defense program, one cannot help but wonder which direction this budgetary "juggernaut" will take. In the coming years it will likely become even clearer that what we need is a definitive strategy for our spending priorities, which then must be supported vigorously with fiscal policy. We must make the hard choices now, when there is still time and money in the federal budget, not later, after the federal budget begins to be constricted by demands in the non discretionary accounts.

ESTABLISH RELEVANT MEASURES OF EFFECTIVES

Because we have not developed relevant and useful measures of effectiveness for the Department Defense we cannot truly gauge what our Defense needs are nor how close we are to achieving our goals for Defense. Are we spending enough, too much, or too little? Are we buying the right things? Are we properly supporting the people and equipment we have invested in? Without metrics that can provide the answers to these questions our leaders are little better off than Goldilocks in her trek through the home of the three bears. Somehow our leaders must be able to divine which strategies are "too hot, too cold, and just right."

But, it is not a lack of measures that we suffer from. Rather, our staffs and Congress are awash in metrics that often seem to provide conflicting information. Our readiness reporting system, for example, is designed to provide an estimate of the ability of our forces to execute the

National Military Strategy. The standard against which our forces are measured has been the traditional two major theater war scenario. Using this standard it is not uncommon for forces that are actively engaged in supporting the National Military Strategy to be rated as unable to meet wartime readiness standards.[32] Given the types of operations we have executed over the last ten years, and considering the odds of the type of major theater wars upon which our readiness system is based, one must ask what our forces must be ready for? Is there value in having units fully capable of executing Balkans-type operations at the expense of a C-1 or C-2 rating for their wartime mission? The direction out of the 2001 QDR is that the two major theater war construct will be set aside in favor of "capabilities-based" requirements and planning process. Ultimately, the question is whether or not the readiness reporting system, as one of the Department's key indices, provides an accurate representation of the readiness of our forces to execute the National Military Strategy. Does it provide the feedback necessary to gauge the effectiveness of resourcing discussions? And is it relevant in today's environment? Clearly, developing metrics that support the Department's mission is critical to determining resource requirements. Without the feedback and reinforcement that effective metrics provide, resource allocation can quickly become an exercise in frustration for all participants. Unfortunately, many organizations, to include the Department of Defense, fail to link their metrics to their vision, as in the readiness example cited above, or they choose to measure too many indicators with the net result that they overload leaders and water-down truly relevant data.

As Mark Brown explains in his book, Keeping Score, the problem is that "they (organizations) measure too many things and too few of the measures are data that are useful in managing performance in the organization. In other words...reports do not contain the right amount of the right data that managers need to make good business decisions and effectively run the organization."[33] Though developing sound metrics may seem easy at first glance, there are several common errors to avoid. In addition to creating metrics that don't directly support an organization's vision or goal, some of the more common pitfalls are:

(1) Developing metrics for which you cannot collect accurate or complete data.

(2) Developing metrics that measure the right thing, but cause people to act in a way contrary to the best interest of the organization simply to make numbers.

(3) Developing so many metrics that you create excessive overhead and red tape.

(4) Developing metrics that are complex and difficult to explain to others.[34]

Properly constructed metrics not only provide a guide for executing an organization's vision, they also help leaders determine if resources are properly allocated or if change is necessary. It

is thus imperative that relevant, useful metrics be developed and used by the Department of Defense and Congress to assess the effect of strategic, policy, and budgetary decisions on the department as a whole.

FLATTEN THE CYCLES IN DEFENSE SPENDING

Obvious cycles in the funding for Defense become apparent when taking a long-term view of the Defense budget. As has already been discussed, these cycles have a deferred, negative effect on the Department's ability to sustain the equipment procured during the high cycles of spending. It is disturbing to note the reduction of operations and maintenance funding for the force just as equipment procured a decade earlier begins to experience increased demands for maintenance. More becomes less if short-term procurement increases are not supported over time with long-term O&M dollars.

Clearly, a longer-term view of Defense spending is required to adequately determine, first, the context of budget policy decisions, and, second, the implication of these decisions. The Department gains a longer term view of the budget through the development of the Future Years Defense Program (FYDP), which summarizes budget information for the previous fiscal year, the current fiscal year, the next two budget fiscal years, and the following four year plan. These items are all critical as the Department analyzes the services' PPBS submissions in the annual program and budget reviews. Congress, on the other hand, continues to debate and finalize the budget annually in one-year increments. This shortsighted view of the Defense budget ensures that both the context and long-term view of the budget remains obscured as the issues are debated and resolved in Congress.

Neither Congress nor the Department are completely culpable or innocent in causing the cycles in Defense spending. There are many contributing causes and actors. However, until the trends in Defense spending are understood and considered in conjunction with long-term implications of budgetary decisions, Defense budgets will likely continue to experience "feast or famine" in the budget as a whole, and in the areas of procurement and O&M funding in particular.

NEAR-TERM ACTIONS

I have suggested in this paper that there are three paths that must be followed simultaneously in order to develop a realistic, effective, and long-term affordable program for the Department of Defense. Because the issues that most affect the Defense budget are external to the Department, achieving an ideal Defense budget will be a difficult struggle that will take

time. Unfortunately, as has been developed in this paper, time is a non-renewable resource that the Department and the Federal government cannot afford to squander. I have challenged our strategic leaders to make difficult decisions, develop effective metrics, and flatten the "sine wave" that has characterized defense spending since 1945. But what can the leadership within the Department do, particularly in the few years remaining before non-discretionary spending begins to quickly erode budgetary authority in the discretionary accounts? We are not without options that can help us reach our goal for Defense spending. Regrettably, the choices available involve difficult decisions that cannot, once made, be altered or watered down by subsequent fiscal policy. The following is my view of how we can begin to shape our Defense budget in ways that will allow us to reach the goal of a realistic, effective, and long-term affordable budget for the Department of Defense.

Given the near-term threats and requirements, we need to get our operational units back "on-track" so that they will be ready to accomplish today's missions. People, parts, and equipment form the heart of this requirement for the next two to three budgets for all the reasons previously cited.

Recapitalization of the force calls for an investment in ensuring that today's aging equipment is able to remain mission capable through the mid-term (2006-2010). This involves adding new off-the-shelf capabilities and extended "life" to our equipment through service life extension programs (SLEPs) and "zero-time, zero-mile" rebuilds of our present generation of gear. In some cases, such as with some aviation assets, new construction of existing designs may be necessary to replace aging platforms that are beyond the financial or functional capability of SLEPS and rebuilds.

At the same time, we will need to reduce or eliminate entirely the procurement of technologies that are not truly "leap-ahead" in order to more heavily invest in RDT&E for the long-term. The technologies that emerge from this effort should be truly "transformational" in keeping with the original aim of the 1997 QDR, and as envisioned in Joint Vision 2020.[35]

Finally, the most comprehensive, long ranging, and, perhaps, most difficult, action is to invest in a ground-up redesign of the DoD accounting system. Both internal DoD Inspector General (DoD IG) and GAO reports have consistently highlighted the inability of DoD systems and processes to accurately account for billions of dollars of transactions. In an August 2000 report, the DoD IG identified $7.6 trillion in department-level entries used to prepare departmental reports and DoD financial statements for FY 1999.[36] Of that $7.6 trillion, only $3.5 trillion were supported by proper accounting methods. Entries of $2.3 trillion were made to force one set of financial data to agree with other various sources of financial data without adherence

to proper accounting principles. The remaining $1.8 trillion in entries were not evaluated due to time and staff limitations.

Similarly, in January 2001 the GAO reemphasized their continued assertion that a number of the Department's key business processes are inefficient and ineffective.[37] In their report on management and program risks within the Department, the GAO identified systemic problems with management processes related to several areas to include financial and information management, acquisition reform, contracting processes, and logistics reengineering.[38] Significantly, the report stated, "no major part of DoD's operations has been able to pass the test of an independent financial audit."[39]

The reports cited are not alone in their criticism of DoD's financial accounting problems. Clearly, there is room for improvement in the way in which the Department's financial data is managed. Until a more effective system is implemented, we cannot be certain of the true level of funding necessary or available at any given time, nor the level of funds available for reprogramming to meet other critical program needs. By revising and improving the accounting and procurement processes, we can make more effective use of funding and, potentially, reduce fiscal demands in the long-term as waste and redundancy are eliminated or at least greatly reduced.

This path allows the Department to meet our operational challenges of today while intelligently investing in future capabilities as conceptualized in Joint Vision 2020 and the 2001 QDR. Concurrently, it will eliminate, or greatly reduce, the opportunity for waste and inefficiency as financial records come in line with accepted accounting practices. This has the potential to reduce the real budgetary demands of the Department in the long-term (2010-2020), thus minimizing conflict with other federal funding priorities without effecting defense capabilities. Additionally, it will also bring the Department into compliance with Constitutionally mandated requirements for accountability.[40]

CONCLUSION

Political expediency often drives short-term solutions to long-term issues. Such is the case with our current process for "fixing" the defense budgets. The lure of easy "fixes" to apparently obvious problems is difficult to overcome and our strategic leadership continues to fall into the pattern of addressing traditional budget challenges in traditional ways. When confronted with fiscal shortfalls the seemingly obvious answer is to increase funding. Yet, as has been covered in this paper, increased funding that cannot be sustained over time creates adverse, unintended consequences years later. The will of Congress and the American citizens is apparent in the

cycles of defense spending since the end of World War II. Today's cycle of increased spending for Defense reflects both the will of our citizenry and Congress, as well as the urgency of successfully fighting the global war on terrorism. With history as our guide we can understand that we have gone through similar cycles in defense spending. What is unique in this cycle are the imminent demands that will be placed on our Federal budget in the mid-term that will challenge any efforts to sustain higher levels of Defense spending.

In order to truly fix our Defense budget our senior leadership must comprehend that the commonly accepted problems with the defense budget are not the true drivers for shortfalls in the Defense program. Accordingly, the commonly accepted means for fixing these problems are inevitably going to fall short of their goals. With a true understanding of the principal factors affecting defense spending, viable, long term solutions can be reached. With an understanding of the causes and context of our current Defense budget dilemma, our strategic leaders can spend their time developing effective solutions to address the real problems rather than chasing red herrings masquerading as apparent evils. By using this approach we can ultimately develop a realistic, effective, and long-term affordable program for the Department of Defense and the Nation.

> We cannot maintain the present force structure and reequip the forces on the present budget levels or the prospective budget levels...We need to make the hard choices...Sooner or later we will have to face up to them, and right now it is probably incumbent upon us to stop kidding ourselves about what we will have in the long run.
>
> —JAMES R. SCHLESINGER, FORMER SECRETARY OF DEFENSE[41]

Word Count=7,777

ENDNOTES

[1] Congress, Senate, Committee on Armed Services, Testimony on the Defense Authorization Request for Fiscal Year 2000 and the Future Years Defense Program, 106th Congress, First Session, 18 March 1999; available from <http://www.senate.gov/~armed_services/hearings/1999/c990318.htm>, accessed 28 September 2001.

Congress, Senate, Committee on Armed Services, Testimony on the Defense Authorization Request for Fiscal Year 2001 and the Future Years Defense Program, 106th Congress, Second Session, 8 February 2000; available from <http://www.senate.gov/~armed_services/hearings/2000/c000208.htm>, accessed 28 September 2001.

Congress, Senate, Committee on Armed Services, Testimony on the Defense Authorization Request for Fiscal Year 2001 and the Future Years Defense Program, 106th Congress, Second Session, 10 February 2000; available from <http://www.senate.gov/~armed_services/hearings/2000/c000210.htm>, accessed 28 September 2001.

Congress, Senate, Committee on Armed Services, Testimony on the Defense Authorization Request for Fiscal Year 2001 and the Future Years Defense Program, 106th Congress, Second Session, 1 March 2000; available from <http://www.senate.gov/~armed_services/hearings/2000/c000301.htm>, accessed 2 October 2001.

Congress, Senate, Committee on Armed Services, Testimony on the Fiscal Year 2002 Budget Amendment, in Review of the Defense Authorization Request for Fiscal Year 2002 and the Future Years Defense Program, 107th Congress, First Session, 28 June 2001; available from <http://www.senate.gov/~armed_services/hearings/2001/a010628.htm>, accessed 15 November 2001.

Congress, Senate, Committee on Armed Services, Testimony on the Fiscal Year 2002 Budget Amendment, in review of the Defense Authorization Request for Fiscal Year 2002 and the Future Years Defense Program, 107th Congress, First Session, 10 July 2001; available from <http://www.senate.gov/~armed_services/hearings/2001/a010710.htm>, accessed 15 November 2001.

Congress, Senate, Committee on Armed Services, Testimony on the Defense Authorization Request for Fiscal Year 2003 and the Future Years Defense Program, 107th Congress, Second Session, 7 March 2002; available from <http://www.senate.gov/~armed_services/e_witnesslist.cfm?id=178>, accessed 10 March 2002.

[2] Jason Sherman, "Pentagon Aims to Streamline Annual Budget Process," Defense News, 12-18 November 2001, 6.

[3] Frank J. Gaffney Jr., "The 'Four Percent Solution' for Military Readiness," San Diego Union Tribune, 13 August 2000.

[4] Sherman, Defense News.

[5] William J. Clinton, A National Security Strategy for a Global Age (Washington, D.C.: The White House, December 2000), 16.

[6] General Accounting Office, Defense Inventory: Army War Reserve Spare Parts Requirements are Uncertain (Washington, D.C.: U.S. General Accounting Office, 10 May 2001), 1.

[7] General Accounting Office, Navy Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness. (Washington, D.C.: U.S. General Accounting Office, 31 July 2001), 2.

[8] Congress, Senate, Committee on Armed Services, See testimony from service chiefs contained within the hearing transcripts cited above in note 1.

[9] In September 1999, in a campaign speech at the Citadel, Bush said he would order a comprehensive review with an eye on eliminating unnecessary bureaucracy and outdated, unnecessary or redundant programs and weapons systems.

[10] Sherman, Defense News.

[11] Donald H. Rumsfeld, Guidance and Terms of Reference for the 2001 Quadrennial Defense Review (Washington, D.C.: Department of Defense, 22 June 2001), 5.

[12] Ibid, 16.

[13] William S. Cohen, Report of the Quadrennial Defense Review, May 1997 (Washington, D.C.; Department of Defense, 19 May 1997) iv.

[14] Ibid.

15 Donald H. Rumsfeld, Quadrennial Defense Review Report (Washington, D.C.; Department of Defense, 30 September 2001) 8.

[16] William S. Cohen, Report of the Quadrennial Defense Review, May 1997, v.

[17] Department of Defense Comptroller, National Defense Budget Estimates for FY 2001 Budget (Green Book), Available from <http://www.dtic.mil/comptroller/fy2001budget/>, Accessed 29 September 2001.

[18] The QDR 1997 directed force was 10% smaller than the programmed FY 1997 force with total reductions of 315,000 personnel from active, reserve, and civilian categories. With an increased budget supporting a smaller force structure there is a much greater level of funding per force structure supported.

[19] The distribution of Milpers (pay and allowances) dollars per active duty person in 1997 was $34,285 versus $33,730 per person in 2001 (using constant FY 2001 dollars). For a detailed breakout of Milpers totals and end FY active duty end strength see Department of Defense Comptroller, "National Defense Budget Estimates for FY 2001 Budget (Green Book)."

[20] Pay and retirement program legislation are but two of the most recent issues the Congress has dealt with in an effort to stem the exodus of service members.

[21] For a complete listing of General Accounting Office publications see <http://www.gao.gov/>. See also the GAO reports cited in this paper.

[22] Franklin C. Spinney, "Tacair Train Wreck Case 1: The Navy/Marine Corps," Marine Corps Gazette, May 1996, 32-34.

[23] General Accounting Office, Tactical Aircraft: Modernization Plans Will Not Reduce Average Age of Aircraft. (Washington, D.C.: U.S. General Accounting Office, February 2001), 5.

[24] Ibid.

[25] For a more detailed discussion see William McNaught, ed., Defense Requirements and Resource Allocation (Washington D.C.; National Defense University, 1989), 107-117.

[26] Congressional Budget Office, A Glossary of Terms used in the Federal Budget Process, 3d Ed. (Washington, DC: Congressional Budget Office, 1993), II-4.

[27] Dennis S. Ippolito, Blunting the Sword: Budget Policy and the Future of Defense (Washington, D.C.; National Defense University, 1994) 111-147.

[28] General Accounting Office, Federal Mandatory Spending on the Elderly. (Washington, D.C.: U.S. General Accounting Office, 11 May 2000), 1.

[29] Ibid.

[30] Daniel Goure and Jeffrey M. Ranney, Averting the Defense Train Wreck in the New Millennium (Washington D.C.; Center for Strategic and International Studies, 1999), 125-6.

[31] General Accounting Office, Federal Mandatory Spending on the Elderly. 1.

[32] In October 1999 the commanders of two U.S. Army Divisions, the 1st Infantry Division and the 10th Mountain Division, downgraded the readiness of their units because portions of each division were deployed on peacekeeping missions in the Balkans. The units each lowered their readiness rating to C-4, the lowest of four readiness ratings.

[33] Mark Graham Brown, Keeping Score (New York: Quality Resources, 1996), 49.

[34] David Trimble, "How to Measure Success: Uncovering The Secrets of Effective Metrics," Undated; available from <http://www.prosci.com/metrics.htm>, accessed 4 August 2001.

[35] Joint Chiefs of Staff, Joint Vision 2020 (Washington, D.C.: Government Printing Office, 2000), 1.

[36] Department of Defense Inspector General, Department-Level Accounting Entries for FY 1999, (Washington, D.C.: Government Printing Office, 2000), p ii.

[37] General Accounting Office, Major Management Challenges and Program Risks: Department of Defense (Washington, D.C.: U.S. General Accounting Office, January 2001), 6.

[38] Ibid, 16.

[39] Ibid, 30.

[40] U.S. Constitution, Article 1, Section 9, Clause 7, also known as the Accountability Clause, states, "No Money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law; and a regular Statement and Account of the Receipts and Expenditures of all public Money shall be published from time to time."

[41] Congress, House of Representatives, Committee on Armed Services, Testimony on the Adequacy of the Defense Budget, 106th Congress, Second Session, 8 February 2000; available from < http://commdocs.house.gov/committees/security/has039000.000/has039000_0.HTM>, accessed 10 March 2002.

BIBLIOGRAPHY

Brown, Mark Graham. Keeping Score. New York: Quality Resources, 1996.

Clinton, William J. A National Security Strategy for a Global Age. Washington, D.C.: The White House, December 2000.

Cohen, William S. Report of the Quadrennial Defense Review, May 1997. Washington, D.C.; Department of Defense, 19 May 1997.

Gaffney, Frank J. "The 'Four Percent Solution' for Military Readiness." San Diego Union Tribune, 13 August 2000.

Goure, Daniel and Jeffrey M. Ranney. Averting the Defense Train Wreck in the New Millennium. Washington D.C.; Center for Strategic and International Studies, 1999.

Ippolito, Dennis S. Blunting the Sword: Budget Policy and the Future of Defense. Washington, D.C.; National Defense University, 1994.

Joint Chiefs of Staff. Joint Vision 2020. Washington, D.C.: Government Printing Office, 2000.

McNaught, William, ed. Defense Requirements and Resource Allocation. Washington D.C.; National Defense University, 1989.

Rumsfeld, Donald H. Guidance and Terms of Reference for the 2001 Quadrennial Defense Review. Washington, D.C.: Department of Defense, 22 June 2001.

_____. Quadrennial Defense Review Report. Washington, D.C.; Department of Defense, 30 September 2001.

Sherman, Jason. "Pentagon Aims to Streamline Annual Budget Process." Defense News, 12-18 November 2001, 6.

Spinney, Franklin C. "Tacair Train Wreck Case 1: The Navy/Marine Corps." Marine Corps Gazette, May 1996, 32-34.

Trimble, David. "How to Measure Success: Uncovering The Secrets of Effective Metrics," Undated. Available from <http://www.prosci.com/metrics.htm>. Internet. Accessed 4 August 2001.

U.S. Congress. House of Representatives. Committee on Armed Services. Testimony on the Adequacy of the Defense Budget. 106th Congress, Second Session, 8 February 2000.

U.S. Congress. Senate. Committee on Armed Services. Testimony on the Defense Authorization Request for Fiscal Year 2000 and the Future Years Defense Program. 106th Congress, First Session, 18 March 1999.

_____. Testimony on the Defense Authorization Request for Fiscal Year 2001 and the Future Years Defense Program. 106th Congress, Second Session, 8 February 2000.

_____. Testimony on the Defense Authorization Request for Fiscal Year 2001 and the Future Years Defense Program. 106th Congress, Second Session, 10 February 2000.

_____. Testimony on the Defense Authorization Request for Fiscal Year 2001 and the Future Years Defense Program. 106th Congress, Second Session, 1 March 2000.

_____. Testimony on the Fiscal Year 2002 Budget Amendment, in review of the Defense Authorization Request for Fiscal Year 2002 and the Future Years Defense Program. 107th Congress, First Session, 28 June 2001.

_____. Testimony on the Fiscal Year 2002 Budget Amendment, in Review of the Defense Authorization Request for Fiscal Year 2002 and the Future Years Defense Program. 107th Congress, First Session, 10 July 2001.

_____. Testimony on the Defense Authorization Request for Fiscal Year 2003 and the Future Years Defense Program. 107th Congress, Second Session, 7 March 2002.

U.S. Congressional Budget Office. A Glossary of Terms Used in the Federal Budget Process, 3d Ed. Washington, DC: Congressional Budget Office, 1993.

U.S. Constitution. Article 1, Section 9, Clause 7.

U.S. Department of Defense Comptroller. National Defense Budget Estimates for FY 2001 Budget (Green Book). Available from <http://www.dtic.mil/comptroller/fy2001budget/>. Internet. Accessed 29 September 2001.

U.S. Department of Defense Inspector General. Department-Level Accounting Entries for FY 1999. Washington, D.C.: Government Printing Office, 2000.

U.S. General Accounting Office. Defense Inventory: Army War Reserve Spare Parts Requirements are Uncertain. Washington, D.C.: U.S. General Accounting Office, May 2001.

_____. Federal Mandatory Spending on the Elderly. Washington, D.C.: U.S. General Accounting Office, May 2000.

_____. Major Management Challenges and Program Risks: Department of Defense. Washington, D.C.: U.S. General Accounting Office, January 2001.

_____. Navy Inventory: Parts Shortages Are Impacting Operations and Maintenance Effectiveness. Washington, D.C.: U.S. General Accounting Office, July 2001.

_____. Tactical Aircraft: Modernization Plans Will Not Reduce Average Age of Aircraft. Washington, D.C.: U.S. General Accounting Office, February 2001.